

smooth vertical surfaces. In life the coloring was bright metallic—with a bright yellow stripe along the sides, quite unlike specimens which have been in a preservative for some time. It measured 196 mm. in length.

c/o FAIZ & Co.,
75, ABDUL REHMAN STREET,
BOMBAY,
August 20, 1954.

HUMAYUN ABDULALI

[Some years ago, Mr. A. F. Hutton sent some live specimens to the Society from the Nilgiri-Wynaad and which in turn were presented to the Victoria Gardens in Bombay. Other specimens in the Society's collection are from Anaimalai Hills and Ootacamund in South India and from Garo Hills in Assam. Mullan (*JBNHS*, 33: 723) records one found by Fr. Blatter at Panchgani, 4,300 ft., Satara District, Bombay. Mr. C. McCann who recorded the species *I. monochrous* from Khandala (*JBNHS*, 31: 1039) stated that 'It lives under stones, during the rains, in burrows much after the fashion of the earthworm which it also resembles in its movements. At first sight it might well be mistaken for one of these creatures as its body is also coated with slime. On the removal of the stone under which it lives the animal soon begins to descend into its burrow away from light'.—Eds.]

41. A NOTE ON THE COURTSHIP IN THE SAND CRAB [*PHILYRA SCABRIUSCULA* (FABRICIUS)]

'Courtship' of an elementary type is observed in *P. scabriuscula* which inhabit the low tide zone of Waltair and Visakhapatnam coast in large numbers.

The courtship commences by the third week of November and lasts till about the end of January. At the height of the season a number of *P. scabriuscula* were observed in pairs each consisting of a male and a female. Most of the females were ovigerous with ripe orange-coloured eggs. In the laboratory the actual courting and copulation were observed for the first time on 25-11-1952. Subsequently this process was repeatedly observed. The male caught hold of the female from the dorsal side by hooking its first pair of ambulatory legs on to the chelipeds and the first pair of walking legs of the female, and thereby getting a firm hold on her; in this position the two remaining motionless for a period which ranged from a few minutes to two hours. When the female straightened her abdomen from its usual tucked-in position, the male with great rapidity formed an arc round the female and still holding her in the same fashion, faced his partner. The two crabs were seen very close to each other just for a few seconds and the male then released the female.

When they are thus close together the sperms from the male are transferred into the genital opening of the female. This is evident from the fact that the anterior part of the sternal groove of the

male is exposed during and immediately after sperm transference. When the two crabs separate, the abdomen of neither is in the tucked-in position. The *receptaculum seminalis* when dissected immediately after copulation contained sperms proving they were actually transferred.

Throughout this process the female is passive. If the female does not relax her abdomen the male faces her and forces her to release the abdomen from the tucked-in position.

P. scabriuscula appears to be peace-loving, for during a period of five years of frequent observation of this widely distributed species the author has not seen more than three instances of fights and this amongst males only. In every case, it was during the breeding season and for a mate. A fight for the seizure of food never occurred. One typical instance of the fight was when a male was attempting to seize a female for mating, and another male approached them. The first male immediately hooked the chelipeds and the first pair of walking legs of the female with its first pair of ambulatory legs paralysing her movements. In this state, he puts up a defensive fight with his chelae, using one of them for catching the wrist of one of the chelae of the opponent thereby disabling the latter from approaching the female already in his possession. This struggle between them lasted for quite a long time (not less than five minutes) during which period the female was not released at all. It was the intruding male that finally fled.

The second instance was almost similar to the above, while in the third case the intruder was much stronger and during the struggle the female escaped. The above instances are not common for, in general, a male with a female remains undisturbed.

DEPARTMENT OF ZOOLOGY,
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August 8, 1954.

(MISS) K. G. RAJA BAI NAIDU

42. SEX RATIO AND VARIABILITY OF APODOUS SEGMENTS IN *APUS* (PHYLLOPODA: CRUSTACEA)

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Males are generally known to be rare in *Apus*. This certainly appears to be the case in *Apus cancriformis*. Gurney, (1925) however, pointed out that in *A. orientalis* (which he referred to as *A. asiaticus*) males outnumbered the females in the collection that he examined. The author (Tiwari, 1952) also reached the same conclusion after examining a number of freshly collected examples of this species from Panchgani in the Bombay State. Recently Main (1953) has stated that in *A. australiensis* males are more abundant than are usually believed to be in *Apus*. He also pointed out the large variability in the number of apodous segments, a character that is greatly relied upon in the taxonomy of *Apus*.